

DESCRIPTION AMENDMENTS

Page 1, after the title, insert the following new paragraph:

CROSS REFERENCE TO RELATED APPLICATION

This application claims priority under 35 USC 119 of United Kingdom Patent Application No. 0216781.5 filed July 19, 2002.

Rewrite the paragraph beginning on page 3, line 3, to read as follows:

In accordance with the present invention, there is provided a rotary machine having a rotor, a stator, and blade rows on the rotor and stator that impart a high swirl component to gases flowing through the machine so that the denser impurities are deflected radially outwards by ~~centripetal~~ centrifugal action onto the inner wall of the stator of the machine, wherein a guide surface is provided on the inner wall of the stator along which any impurities separated by the ~~centripetal~~ centrifugal action from the main gas stream are entrained by the main gas stream and guided to flow from the gas intake side to the gas outlet side of the machine, the guide surface being radially stepped to resist only reverse flow of the separated impurities back towards the gas intake side of the machine and being operative at the downstream end of the machine to discharge the separated impurities back into the main gas stream for the impurities to exit from the machine with the main gas stream.

Rewrite the paragraph beginning on page 3, line 21, to read as follows:

In the invention, the impurities are separated from the main gas stream and are urged radially against the guide surface by ~~centripetal~~ centrifugal action. Thereafter, the viscous drag of the main gas stream is relied upon to entrain the impurities and displace them toward the downstream end of the machine compressor despite the pressure difference between the ends of the machine. The steps in the guide surface do not interfere with the flow of the impurities towards the downstream end of the machine but prevent the differential pressure between the opposite ends of the machine from causing a reverse flow of the separated impurities back towards the gas intake side of the machine.

Rewrite the paragraph beginning on page 3, line 34, to read as follows:

The guide surface may conveniently be formed by a stepped groove in the inner wall of the stator that only extends around part of the circumference of the stator. It is however alternatively possible for several such grooves ~~of scallops or scallops~~ to be placed in the path of the rotor blade. A still further possibility is for the entire inner surface to be constructed as a stepped surface being formed of a series of near conical sections that are separated from one another by sharp radial ~~shoulder~~ shoulders that prevent reverse gas and liquid flow.

Rewrite the previously amended paragraph beginning on page 4, line 24 to read as follows:

The rotary machine shown in Figure 1 is a compressor intended for use in a bore hole of a gas well. Gas flows in the direction of the arrows 10, being drawn from the well by the action of the compressor and pumped under pressure into the bore hole. The effect of the compressor is of course to create a higher pressure at its outlet side, shown to the left in all the figures in the ~~drawings~~ drawings, than at its intake side.

Rewrite the paragraph beginning on page 5, line 34, to read as follows:

The ~~embedments~~ embodiment of Figure 2 is rotationally symmetrical about the axis of the rotor 11 and therefore only one side needs to be shown in the drawing. The guide surface 17 is in this case formed of a series of near conical sections that are separated from one another by sharp radial shoulders.